

REMARKS

I. STATUS OF THE CLAIMS

Claims 1-3, 5-22 and 24-56 are pending in this Application. Claims 9-12 and 15-17 were withdrawn by the Examiner.¹ Claim 23 was cancelled and the limitations recited therein were incorporated into independent claim 1.

Applicants acknowledge and appreciate that the Examiner has withdrawn the objection to the specification. Applicants further acknowledge and appreciate that the Examiner has withdrawn the Section 103(a) rejection of claims 1-11, 13 and 18-32 over U.S. Patent No. 4,006,272 to Sakaguchi et al. in view of U.S. Patent No. 6,139,958 to Raghupathi et al.

II. REJECTIONS UNDER 35 U.S.C. § 103(a)

A. Sakaguchi et al. in view of Raghupathi et al.

The Examiner has maintained the rejections of claims 44, 46 and 51-56 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,006,272 to Sakaguchi et al. ("*Sakaguchi*") in view of U.S. Patent No. 6,139,958 to Raghupathi et al. ("*Raghupathi*") for the reasons disclosed on pages 3-4 of the Office Action dated May 6, 2005, and on pages 4-5 of the Office Action dated July 2, 2004. Applicants respectfully traverse this rejection for at least the reasons of record as well as for the following reasons.

¹ Applicants request clarification with respect to the status of claims 33-43, which were indicated as pending, but were not rejected by the Examiner. Since these pending claims were not rejected, Applicants request that the Examiner indicate that these claims contain allowable subject matter.

To establish a prima facie case of obviousness over a combination of references, the Examiner “bears the initial burden of factually supporting any prima facie conclusion of obviousness.” *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Specifically, the Examiner must prove such a desire to combine references with “substantial evidence” that is a result of a “thorough and searching” factual inquiry. *In re Lee*, 277 F.3d 1338, 1343-1344 (Fed. Cir. 2002). The Federal Circuit has on numerous occasions stated that to establish a prima facie case of obviousness an Examiner must show that the references, taken alone or in combination, (1) teach all the present claim limitations; (2) would have suggested to or provided motivation for one of ordinary skill in the art to make the claimed invention; and (3) would have provided one of ordinary skill with a reasonable expectation of success in so making. See *In re Vaeck*, 947 F.2d 488, 493 (Fed. Cir. 1991) (citing *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988)). “Both the suggestion and the reasonable expectation of success must be found in the prior art reference, not in the applicant’s disclosure.” *Id.* at 493.

1. The cited prior art does not teach all the present claim limitation.

In the present case, the rejection under § 103 is fatally flawed because the combination of *Sakaguchi* and *Raghupathi* fail to teach all of the limitations of claims 44, 46 and 51-56. Claim 44 recites, inter alia, “[a]n at least partially coated fiber strand comprising a plurality of fibers, the coating comprising . . . a plurality of discrete lamellar particles” Claim 51 recites, inter alia, “[a]n at least partially coated fiber strand comprising a plurality of glass fibers having a resin compatible coating composition . . .

comprising: . . . a plurality of discrete lamellar, inorganic particles. . . .” Applicants note that in both instances, a plurality of *discrete lamellar* particles is claimed.

Sakaguchi teaches a powder of finely divided silica, *see Sakaguchi* Abstract and col. 4, lines 3-8, which the Examiner maintains are “lamellar particles.” Office Action dated May 6, 2005, at 3. As disclosed in the current specification, particles having a lamellar structure are “composed of sheets or plates of atoms in hexagonal array, with strong bonding within the sheet and weak van der Waals bonding between sheets, providing low shear strength between sheets. . . .” Specification at page 16, lines 21-32 (citations omitted). The structure of silica, on the other hand, is defined by a three-dimensional crystal lattice of the general formula SiO_4 , in which no van der Waals bonds are present. See CHARLES C. PLUMMER & DAVID MCGEARY, PHYSICAL GEOLOGY 27 (3rd ed. 1985) (stating that the Si-O bonds in silica are either covalent or ionic). In this lattice, the oxygen atoms are “strongly” bonded around the silicon atoms in a tetrahedral manner. *Id.* As a result of the uniform lattice structure of silica and the lack of weak van der Waals bonds required for lamellar structures, silica is distinctly non-lamellar. Therefore, Applicants maintain that there is no teaching of a plurality of discrete lamellar particles in *Sakaguchi*.

As discussed in Applicants’ December 2, 2004, Office Action response and incorporated by reference herein in full, *Raghupathi* does not remedy the deficiencies of *Sakaguchi*. The only mention of particles in *Raghupathi* is in connection with a discussion of film-forming materials and the particles cited consist of non-discrete polymers that form a precured microgel emulsion. *Raghupathi* at col. 4, line 64 to col. 5, line 20. Applicants maintain that, in light of the description found in the specification,

one of skill in the art would not characterize the disclosed polymers as having a lamellar structure. As a result, *Raghupathi* also fails to teach particles that possess a lamellar structure.

2. There is no suggestion or motivation for one in the art to make the claimed invention

Moreover, Applicants submit that the Examiner cannot demonstrate a suggestion or motivation to modify the teachings of the references to make the claimed invention. Specifically, Applicants submit that the Examiner's proposed combination fails to take into account the disparate teachings of the references.

First, *Sakaguchi* teaches a process for preparing resin-impregnated glass fiber mats in which the binder resin dissolves rapidly in vinyl monomers. *Sakaguchi* at col. 1, lines 7-10. *Raghupathi*, on the other hand, is a chemical treating composition that is applied to glass fibers for the purposes of controlling wettability and weatherability. See *Raghupathi* at Abstract and Summary of Invention.

Second, the binder resin utilized to prepare the mats in *Sakaguchi* is a styrene resin or a copolymer composed mostly of styrene, or a mixture of said styrene resin or copolymer with an unsaturated polyester resin. See *Sakaguchi* at Abstract and Summary of Invention. The chemical treating composition in *Raghupathi* comprises film forming polymers, organo coupling agents, a lubricant, a salt and water. See *Raghupathi* at Abstract and Summary of Invention.

Sakaguchi and *Raghupathi* are thus directed to the use of *different* chemicals for *different* purposes to obtain *different* products. Thus, Applicants assert that one of

ordinary skill in the art reading these two references would not have been motivated to combine their divergent teachings.

Accordingly, Applicants submit that there is no evidence of record (1) to establish that all of the claim limitations are met upon modifying/combining the references' teachings, as per M.P.E.P. § 2143.03; and (2) to establish a motivation to modify the teachings of *Sakaguchi* or combine with the teaching of *Raghupathi* to correct its deficiencies, as per M.P.E.P. § 2143.01.

As a result, Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness, and respectfully request that the Section 103 rejections be withdrawn.

B. Kotera et al. in view of Raghupathi et al.

1. Claims 1-3, 5-8, 13-14, 18-32, and 44-56²

The Examiner maintains the rejections of claims 1-3, 5-8, 13-14, 18-32 and 44-56 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 4,340,519 to Kotera et al. ("*Kotera*") in view of *Raghupathi*. Applicants respectfully traverse this rejection for at least the reasons of record as well as for the following reasons. Applicants maintain that a prima facie case of obviousness has not been established because the Examiner has not shown that *Kotera* and *Raghupathi*, in combination, meet the requirements for a rejection under Section 103(a).

² Although not stated in the list of rejected claims on page 5 of the July 7, 2004, Office Action, Applicants assume that the Examiner has also rejected claim 37 due to the discussion of the claim on page 6. Applicants respectfully request that the Examiner confirm this assumption.

In this case, the Examiner fails to present substantial evidence on the three prongs necessary for a proper rejection under Section 103(a). First, neither the proposed combination of *Kotera* and *Raghupathi*, nor the evidence of the knowledge of one skilled in the art, teaches or suggests all the claim limitations. Second, there is no evidence of a suggestion or motivation that would prompt a person of ordinary skill in the art to combine *Kotera* and *Raghupathi*. Third, there is no evidence of a reasonable expectation of success that would result from a person of ordinary skill in the art combining *Kotera* and *Raghupathi*. Moreover, “[i]t is improper to combine references where the references teach away from the proposed combination.” See, e.g., M.P.E.P. § 2145.

a. The cited prior art does not teach all the present claim limitations

First, Applicants respectfully submit that the rejection under § 103 is fatally flawed because the combination of *Kotera* and *Raghupathi* fails to teach all of the limitations of independent claims 1, 44 and 51, and claims 2-3, 5-8, 13-14, 18-32, 45-50 and 52-56 which depend therefrom.

Claim 1 recites “[a]n at least partially coated fiber strand comprising a plurality of fibers having a resin compatible coating composition on at least a portion of a surface of at least one of the fibers, the resin compatible coating composition comprising a plurality of discrete particles . . . , wherein the at least one fiber strand comprises at least one glass fiber.” Claim 44 recites “[a]n at least partially coated fiber strand comprising a plurality of fibers, the coating comprising . . . a plurality of discrete particles. . . , wherein the fiber strand comprises at least one glass fiber. Claim 51 recites “[a]n at least

partially coated fiber strand comprising a plurality of glass fibers having a resin compatible coating composition on at least a portion of a surface of at least one of the glass fibers, the resin compatible coating composition comprising . . . a plurality of discrete . . . particles.

Conspicuously absent from the disclosure in *Kotera*, however, is any mention of a fiber strand comprising at least one glass fiber having a resin compatible coating composition comprising a plurality of discrete particles. Indeed, the Examiner acknowledges this fact by stating that “*Kotera* does not specifically teach glass fibers of the type contemplated by applicants. . . .” Office Action dated July 2, 2004, at 6.

Nothing in *Raghupathi* corrects the deficiencies of *Kotera*. As discussed above and incorporated by reference herein in full, the Examiner incorrectly characterizes the polymers suspended in the microgel emulsion in *Raghupathi* as discrete particles. See *Raghupathi* at col. 15, lines 10-16. Thus, *Raghupathi* fails to teach or suggest the existence of an at least partially coated fiber strand having a composition comprising, *inter alia*, a plurality of discrete particles.

Accordingly, both *Kotera* and *Raghupathi* fail to teach all the present claim elements.

- b. There is no suggestion or motivation for one of skill in the art to make the claimed invention

The Federal Circuit has noted that the Examiner’s burden to establish a motivation to combine or modify is provided by an objective teaching found in the prior art. The Examiner’s factual findings regarding the motivation to combine or modify must

be “clear and particular.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). The Examiner fails to set forth such “clear and particular” evidence here.

1.) *The Examiner’s failure to present evidence of motivation dictates dismissal of the Examiner’s rejection*

Although the Examiner claims that, when combined, *Kotera* and *Raghupathi* disclose the present invention, the Examiner failed to make a factual inquiry based on the objective evidence of record. Such an inquiry reveals that there is no motivation to make the proposed combinations at the time the invention was made for at least the following reasons.

First, *Kotera* is drawn to preparing an aqueous dispersion of polyester resin, comprising a crystalline polyester, a non-crystalline polyester, a water-soluble organic compound and water. See *Kotera* at Abstract. As stated above and incorporated by reference in full, *Raghupathi* is drawn to a method of preparing chemically treated glass fibers, wherein the chemical treating composition comprises film forming polymers, organo coupling agents, a lubricant, a salt and water. See *Raghupathi* at Abstract and Summary of Invention.

Second, *Kotera* teaches that the resin can give a coating layer having excellent water resistance and weatherability. See, e.g., *Kotera* at Abstract and col. 2, lines 9-12. The coating in *Raghupathi*, however, is drawn to a coating that “enables a more facile wet-out” of the glass fibers. *Raghupathi* at col. 1, lines 15-18.

Third, *Kotera* is drawn to preparing a resin dispersion to treat plastic and glass products, such as “horticultural house, materials for window, lens, or the like.” *Kotera* at

col. 9, lines 45-47. *Raghupathi*, on the other hand, is drawn to preparing fiber reinforced polymer panels. *Raghupathi* at col. 1, lines 17-18. Such a use is not specifically taught or implied by *Kotera*.

Kotera and *Raghupathi* are therefore directed to the use of *different* chemicals in *different* methods for *different* purposes to obtain *different* products. As a result, one of ordinary skill in the art reading these two references would not have been motivated to combine their divergent teachings as proposed by the Examiner. Accordingly, for at least this reason, Applicants submit that the Examiner has failed to demonstrate a prima facie case of obviousness.

2.) *The references teach away from the Examiner's proposed combination*

It is well-settled that claims are not obvious if the cited reference or other relevant art teaches away from the claimed invention. M.P.E.P. § 2145(X)(D)(1).

In the present case, *Kotera* and *Raghupathi* expressly teach away from their combination. Central to the invention disclosed in *Kotera* is a polyester resin that is utilized “for various utilities such as coating compositions, laminated products, aqueous printing ink, aqueous binder for coating, and surface treating agent for giving drip-proof.” *Kotera* at col. 2, lines 15-20. Indeed, *Kotera* expressly teaches that the resin gives “a coating film having excellent water resistance and excellent weatherability.” See, e.g., *id.* at col. 1, lines 7-8; col. 2, lines 11-15; col 7, lines 47-48. The potential uses of the polyester resin disclosed in *Kotera* and all the Examples found in *Kotera* further support this fact. Such language clearly indicates that the resin acts as an external coating for a finished object.

An examination of the entire disclosure in *Raghupathi*, however, leads one of skill in the art away from a combination with *Kotera*. *Raghupathi* discloses coated glass fibers that are distributed somewhat uniformly over a polymeric matrix. *Raghupathi* at col. 11, lines 17-19. The dispersed glass fibers then become effectively embedded within the polymeric material in which they are incorporated, with little or no contact with any external surfaces. *Id*; see also *id.* at col. 11, lines 4-7. Such a teaching in *Raghupathi* clearly would lead one skilled in the art away from the combination of this reference with *Kotera*, where the claimed polyester resin is utilized on external surfaces. For at least this reason, the teachings of *Kotera* and *Raghupathi* cannot be combined in the manner proposed by the Examiner.

c. There is no evidence of a reasonable expectation of success

In addition to showing a motivation to modify/combine the prior art references to make the claimed invention, the Examiner must show why a person of ordinary skill in the art would have had a reasonable expectation of success for such a modification/combination. See, e.g., M.P.E.P. §2143.02.

In the present case, the Examiner has not presented evidence that the teachings of *Kotera* and *Raghupathi* would have provided one of ordinary skill in the art with a reasonable expectation of success in making the present invention. Rather, the Examiner remains silent as to how the teachings of either reference would suggest such an expectation. Since the Examiner has not provided *any* justification or support for such an expectation, Applicants submit that the Examiner has failed in the duty to adequately show reasonable expectation of success. As a result, Applicants

respectfully assert that the Examiner has failed to establish a prima facie case of obviousness and, as a result, has not met the burden for establishing obviousness. Applicants respectfully request that the Section 103 rejection of claims 1, 5-8, 13, 14 and 18-32 be withdrawn.

2. Claims 18, 19 and 37

As with independent claims 1, 44 and 51, the Examiner has not met the burden for establishing a prima facie case of obviousness for claims 18, 19 and 37. Specifically, in regard to claim 18, the Examiner states that “the particles *necessarily* provide some degree of interstitial spacing.” Office Action dated July 2, 2004, at 6 (emphasis added). The Examiner further rejects claims 19 and 37 by asserting that each “claim is drawn to the size of the particles, wherein size is *not ordinarily* a matter of invention.” *Id.* In making such rejections, the Examiner does not cite to any supporting documentary evidence, either from the record or from statutory sources, and, instead, makes broad, conclusory statements which require one of ordinary skill in the art to make unwarranted assumptions about interstitial spacing and the size of the claimed particles. However, the Federal Circuit has stated that “[m]ere . . . conclusory statements . . . are not sufficient to establish a genuine issue of material fact.” *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578 (Fed.Cir. 1993). Since the Examiner has not provided *any* justification or support for such arguments, Applicants submit that the Examiner has failed in the duty to adequately support the Examiner’s conclusion and has failed to make a prima facie showing of obviousness. . See M.P.E.P. § 2144.03; see also *In re Ahlert*, 424 F.2d at 1091.

Accordingly, the rejection under Section 103 is in error and should be withdrawn.

C. Hager et al. in view of CONCISE CHEMICAL AND TECHNICAL DICTIONARY

The Examiner has further rejected claims 1-3, 5, 18-32 and 51-56 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,689,601 to Hager et al. ("*Hager*") in view of CONCISE CHEMICAL AND TECHNICAL DICTIONARY 447, 689 (4th ed. 1986) ("*Dictionary*"). Applicants submit that a prima facie case of obviousness has not been established because the Examiner has not shown that *Hager* and *Dictionary*, in combination, meet the requirements for a rejection under Section 103(a).

1. The cited prior art does not teach all the present claim limitations

a. Claims 1-3, 5 and 18-32

Applicants respectfully submit that the rejection under Section 103 is fatally flawed because *Hager* does not teach all of the limitations of claims 1-3, 5 and 18-32. Independent claim 1 recites "[a]n at least partially coated fiber strand comprising a plurality of fibers having a resin compatible coating composition on at least a portion of a surface of at least one of the fibers, the resin compatible coating composition comprising: . . . at least one lubricious material different from the plurality of discrete particles, wherein the at least one lubricious material comprises from 1 to 50 weight percent of the resin compatible coating composition on a total solids basis; . . . wherein the at least one fiber strand comprises at least one glass fiber."

Conspicuously absent from *Hager* is a lubricious material comprising from 1 to 50 weight percent of the resin compatible coating composition on a total solids basis. In the current Office Action, the Examiner states that *Hager* discloses a paraffin wax

emulsion which allegedly functions to read on the claimed lubricious material. See Office Action dated May 5, 2005, at 3 (citing *Hager* at col. 4, lines 43-44). However, the relevant disclosure in *Hager* cited by the Examiner actually teaches two separate compositions, neither one of which discloses the presently claimed weight percentages.

A first composition of a binding agent disclosed in *Hager* comprises a latex component and a paraffin emulsion, and thus the “approximately 5% paraffin wax emulsion” is relative only to the latex component. *Hager* further teaches that the amount of binding agent applied is “2 to 20% of dry weight of the glass fiber strand.” *Hager* at col. 3, lines 4-5; see *also* col. 5, lines 2-3. Since the first composition contains approximately 5% of the paraffin wax emulsion, and since 20% is the largest total amount of binding agent that can be present in the composition of *Hager*, then at most 1% (based on the calculation of $0.2 \times 0.05 \times 100$) of the paraffin wax emulsion can be present in *Hager*’s binding agent composition.

However, the amount of paraffin wax, based on total solids content as claimed, will necessarily be less than 1%. This conclusion is based on the fact that the emulsion will necessarily contain a liquid, such as water, and, as a result, the solids content of the paraffin wax will necessarily be less. For example, assuming a 50% paraffin wax emulsion was used, and assuming the binding agent composition was present in an amount of 20%, the highest amount disclosed in *Hager*, this theoretical composition would contain, at most, 0.5% by weight of the paraffin wax, which is less than the amount claimed in the present invention. Using any amount less than the upper limit of 20% will further distinguish the independent claims discussed in this section from *Hager*. Therefore, the weight percent of the at least one lubricious material on a weight

percent of the coating composition on a total solids basis is not identically described or disclosed by *Hager*.

b. Claims 51-56

As with independent claim 1, Applicants assert that *Hager* fails to teach or suggest all of the limitations of independent claim 51 and claims 52-56 that depend therefrom. Claim 51 recites, in part, an at least partially coated fiber strand comprising a plurality of glass fibers having a resin compatible coating composition comprising, inter alia, a plurality of discrete lamellar, *inorganic* particles. *Hager*, however, does not disclose a resin compatible composition comprising a plurality of discrete lamellar, *inorganic* particles.

On the contrary, the Examiner states that *Hager* discloses “discrete particles of an acrylic latex material.” Office Action dated May 5, 2005, at 3. Applicants assert that one of skill in the art would interpret an acrylic latex material to be an *organic* material, since the element carbon is present. See HAWLEY’S CONDENSED CHEMICAL DICTIONARY 653 (14th ed. 2001) (defining latex as “a white, tacky, aqueous suspension of a *hydrocarbon* polymer. . . .”)(emphasis added). Furthermore, although the Examiner lists *Dictionary* as a reference, it is only cited to show the state of the art and does not disclose any inorganic particles. As such, Applicants respectfully submit that neither *Hager* nor *Dictionary*, nor the combination of the two, teach or suggest all the limitations found in claims 51-56.

2. There is no suggestion or motivation for one in the art to make the claimed invention and no evidence of a reasonable expectation of success

In addition to teaching or suggesting all the claim limitations the Examiner must also show (1) a motivation to modify/combine the prior art references to make the claimed invention and (2) why a person of ordinary skill in the art would have had a reasonable expectation of success for such a modification/combination. See, e.g., M.P.E.P. §2143.02.

In the present case, the Examiner has not presented evidence that the teachings of *Hager* and *Dictionary* would have provided a motivation for one of skill in the art to modify the references to make the claimed invention, nor has the Examiner presented evidence that would provide one of ordinary skill in the art with a reasonable expectation of success in making the present invention. Rather, the Examiner remains silent as to how the teachings of either reference would suggest to one skilled in the art that the present invention could be claimed successfully. The Federal Circuit has held that the Examiner must not only “assure that the requisite findings [of motivation] are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency’s conclusion.” *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002). Thus, the Examiner’s silence in this regard implies a reliance on “common knowledge and common sense.” Such reliance, however, does not fulfill the Examiner’s obligation to cite references that support the conclusions enumerated in the Office Action. *Id.* at 1344.

As a result, Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness and respectfully request that the Section 103 rejection of claims 1-3, 5, 18-32 and 51-56 be withdrawn.

III. CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: August 5, 2005

By: 

Mark D. Sweet
Reg. No. 41,469

Attachments:

- 1) CHARLES C. PLUMMER & DAVID MCGEARY, PHYSICAL GEOLOGY 27 (3rd ed. 1985)
- 2) RICHARD J. LEWIS, SR., HAWLEY'S CONDENSED CHEMICAL DICTIONARY 653 (14th ed. 2001)